

BRYAN-BROWN et al.
Appl. No. 10/775,342
May 1, 2006

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-16. *(Cancelled)*

17. *(Currently Amended)* A bistable nematic liquid crystal device comprising:
a first cell wall and a second cell wall, said first cell wall and said second cell wall enclosing a layer of liquid crystal material,

wherein said first cell wall has a first surface treated to provide a bistable pretilt to molecules of liquid crystal material,

where in a first stable state, liquid crystal molecules have one pretilt zenithal angle from the first surface, and in a second stable state, liquid crystal molecules have a second different pretilt zenithal angle from the first surface, and

wherein said second cell wall has a first surface treated to provide monostable alignment to molecules of liquid crystal material, and

wherein the first and second stable states of said bistable nematic liquid crystal device correspond to provides two-stable and optically distinguishable liquid crystal configurations.

18. *(Previously Presented)* A device according to claim 17 wherein the first surface of the second cell wall is treated with one of a planar, a degenerate planar or a homeotropic surface treatment.

BRYAN-BROWN et al.
Appl. No. 10/775,342
May 1, 2006

19. *(Currently Amended)* A device according to claim 17 wherein said layer of liquid crystal material comprises a nematic liquid crystal material.

20. *(Previously Presented)* A device according to claim 17 wherein said layer of liquid crystal material comprises a long pitch cholesteric liquid crystal material.

21. *(Previously Presented)* A device according to claim 17 wherein the first surface of the first cell wall comprises a plurality of pillars.

22. *(Previously Presented)* A device according to claim 21 wherein the height of each of said plurality of pillars is within the range of 1-3 μm .

23. *(Previously Presented)* A device according to claim 21 wherein the width of each of said plurality of pillars is within the range of 5-50 μm .

24. *(Previously Presented)* A device according to claim 21 wherein the width of each of said plurality of pillars is greater than 50 μm .

25. *(Previously Presented)* A device according to claim 21 and further comprising a plurality of beads dispersed in said layer of liquid crystal material.

BRYAN-BROWN et al.
Appl. No. 10/775,342
May 1, 2006

26. *(Currently Amended)* A cell wall for a bistable nematic liquid crystal device, said cell wall having a first surface with a patterned surface profile to provide two different pretilt zenithal angles from the first surface in the same azimuthal plane to molecules of liquid crystal material, wherein said patterned surface profile comprises at least one pillar, and wherein the first surface provides the bistable nematic liquid crystal device two stable and optically distinguishable liquid crystal configurations.

27. *(Previously Presented)* A device including a cell wall according to claim 26 wherein the height of each of said plurality of pillars is within the range of 1-3 μ m.

28. *(Previously Presented)* A device including a cell wall according to claim 26 wherein the width of each of said plurality of pillars is within the range of 5-50 μ m.

29. *(Previously Presented)* A device including a cell wall according to claim 26 wherein the width of each of said plurality of pillars is greater than 50 μ m.

30. *(Previously Presented)* A device including a cell wall according to claim 26 wherein said pillars are embossed.

31. *(Previously Presented)* A liquid crystal device providing two stable and optically distinguishable liquid crystal configurations, said device comprising a cell wherein said cell has a cell wall according to claim 26.

BRYAN-BROWN et al.
Appl. No. 10/775,342
May 1, 2006

32. *(Currently Amended)* A liquid crystal device ~~being latchable between~~ providing a first stable liquid crystal configuration and a second stable liquid crystal configuration, said first stable liquid crystal configuration being optically distinguishable from said second stable liquid crystal configuration, said device comprising a cell, said cell having at least one cell wall having a first surface that provides ~~to provide~~ two different pretilt angles in the same azimuthal plane to molecules of liquid crystal material, wherein said first stable liquid crystal configuration is a twisted molecular configuration.

33. *(Previously Presented)* A device according to claim 32 wherein said second stable liquid crystal configuration is a non twisted molecular configuration.

34. *(Previously Presented)* A device according to claim 32 wherein said molecules of liquid crystal material exhibit positive dielectric anisotropy.

35. *(Previously Presented)* A device according to claim 32 wherein said molecules of liquid crystal material exhibit negative dielectric anisotropy.

36. *(Currently Amended)* A bistable nematic liquid crystal device comprising;
a first cell wall and a second cell wall, said first cell wall and said second cell wall enclosing a layer of liquid crystal material,
wherein said first cell wall has a first surface treated to provide two different pretilt zenithal angles from the first surface to molecules of liquid crystal material, and

BRYAN-BROWN et al.
Appl. No. 10/775,342
May 1, 2006

wherein said second cell wall has a first surface treated to provide monostable alignment to molecules of liquid crystal material, and
wherein said bistable nematic liquid crystal device provides two stable and optically distinguishable liquid crystal configurations.